

END OF THE FIRST URBANISATION

1. PRELIMINARY REMARKS

The problem of the decline and end of the Indus Civilization is evidently one with which primarily the archaeologists are concerned. Still the historian of science cannot evade it. The reasons for this are obvious. First, in order not to be a mere inventory of the prominent achievements of the scientists, the history of science in India has to be related to the mainstream of Indian history—has in fact to be viewed as an important dimension of Indian history—more or less neglected though it may be by the histories of science in India so far. Evidently, the end of the Indus Civilization is a phenomenon too important to be ignored about ancient Indian history. Secondly, even from the restricted standpoint of the history of science in India, the end of the Indus Civilization with its imposing technological achievements and the possible making of arithmetic, geometry and astronomy coming to a virtual extinction with it means some kind of abrupt break in the scientific tradition, and it is incumbent for the historian of science to seek an explanation of it, for he is concerned not merely with factors that helped but also those that inhibited or disturbed its growth. And the fact is that from the technological-scientific point of view at any rate, the end of the Indus Civilization meant also the beginning of a fallow period that extended over many centuries. It is because of this that the archaeologists often refer to it as the “Dark Period” or “Dark Age”, though, as we are going to see, from some viewpoint, this period is not totally dark after all. In spite of the loss of the technological magnificence and also the loss of script, it is the period of the creation of a vast body of literature—orally transmitted during many centuries—and also that of the making—or at least of the beginning of certain formal disciplines like linguistics, metrics, etc., required for the purpose of the meticulous preservation of this literature and such disciplines are not totally denuded of scientific interest. Further, a section of leading archaeologists at any rate are inclined to connect the end of the Indus Civilization with those people that

created this vast body of orally composed literature and hence also initiated the formal disciplines required for its preservation. But more of this later.

2. DECLINE OF THE INDUS CIVILIZATION

That after a glorious career of about five hundred years, the Indus Civilization came under the grip of decline and degeneration is archaeologically indisputable. Depending mainly on Mackay's work, Gordon Childe gives us some typical examples of this: 'The last reconstructions of Harappan cities exhibit every sign of decadence. Old bricks were re-used for building mean houses on the sites formerly occupied by the spacious mansions of the bourgeoisie. The civic authority could no longer enforce the building regulations so strictly observed in more prosperous days so that the dwellings encroached upon the streets'.¹ Discussing the fate of Mohenjo-daro city, Wheeler observes²:

One thing at least is clear about the end of Mohenjo-Daro: the city was already slowly dying before its ultimate end. Houses, mounting gradually upon the ruins of their predecessors or on artificial platforms in the endeavour to out-top the floods, were increasingly shoddy in construction, increasingly carved up into warrens for a swarming lower-grade population. Flimsy partitions subdivided the courtyards of houses. To a height of 30 feet or more, the tall podium of the Great Granary on the western side of the citadel was engulfed by rising structure of poorer and poorer quality. Re-used brick-bats tended to replace new bricks. The city, to judge from excavated areas, was "becoming a slum".

Why, then, was this decadence and degeneration after a splendid career of above five hundred years or more? This is a question about which there is a good deal of controversy among the contemporary archaeologists. Perhaps it is premature at the present stage of research to expect any clear and definite answer to the question. What is possible nevertheless is to mention here some of the prominent views advanced with comments on their comparative plausibility.

To begin with, let us note that what was perhaps true of the Mohenjo-daro city was not likely to be true of the entire

1. G. Childe NLMAE 187

2. M. Wheeler IC (1979) 127

vast area covered by the Harappan culture. Nevertheless, we cannot possibly ignore the fate of the Mohenjo-daro city itself. At least one of the factors that contributed to the decline of this city was repeated flooding of it which, as the Allchins observe, 'has been long known and cannot be entirely discounted as a cause of local destruction'.³ It is true that the Harappans could and did rebuild or repair the city repeatedly after the devastating floods; but that must have sapped much of their energy and vitality, and hence also caused deviation from their main preoccupations. It is also tempting to conjecture that this could have further considerably weakened—or at least adversely affected—the prestige of the city rulers if they were priests, priestly corporations or priest-kings, because one source from which they were likely to create a belief of supernormal power in the popular mind could have been their capacity for predicting the coming of the floods based on their astronomical knowledge and calendrical science. If in spite of this, they failed to predict the coming of the floods caused mainly by natural catastrophes beyond the depth of their own understanding—not to speak of preventing these with their allegedly supernatural power—the city dwellers were likely to have raised awkward questions about their authority, which, as we have just seen, must have been considerably weakened, as a result of which the magnificently planned city was gradually reduced to some kind of slum.

So, the ravages caused by floods were likely to have been one of the factors that caused degeneration to the Mohenjo-daro city itself. But some of the archaeologists appear to go a step further and want to view the floods—along with other climatic and tectonic change—basically responsible for the degeneration and destruction of the Harappan culture as such. It is not necessary for our present purpose to attempt a re-examination of their views, because one of our most competent archaeologist-scientists, D. P. Agrawal, has already done it. We sum him up at some length.⁴

In 1956, M. R. Sahni suggested the possibility of explaining the end of Mohenjo-daro by the 'impounding of the Indus.'

3. B. & R. Allchin RCIP 224.

4. D.P. Agarwal AI 188-9

Raikes and Dales wanted to revive the theory more forcefully. According to them 'a tectonically caused large mud-extrusion impounded the Indus causing colossal silting', which eventually engulfed Mohenjo-daro. Lambrick, however, points to the difficulty of accepting such a theory. First, such a barrier would result in the shedding off of the silt-load by the river considerably upstream and not on the inner side of the dam. Besides, a permeable barrier could hardly stand the great impact of water coming at the rate of 2,270,000 litres per second: in 1819 a mud-extrusion caused by earthquake was washed away in 1826 by the first flood coming down the Nara. But Raikes and Dales came out with a renewed defence of their flood-theory, arguing that part of the water-discharge could take the course of the Nara. Agrawal, however, raises a number of 'basic questions against the view of Raikes and Dales: 'If there was such a vast lake around, how could any crops grow and therefore provide any surplus to sustain a city?.... How could carts ply on a muddy road, if they were living in a quagmire? How could the drains function at all?.... Will not such extreme conditions kill the people *en masse* before any mud-lake engulfed them?' And so on. Not that Agrawal denies that 'the Indus did affect the fortunes of the Harappans in more than one way. Frequent floods were sapping their energy. Their raised platforms and massive bunds indicate the severity of the problem. The Indus has been raising its flood level continuously necessitating safeguard measures,... causing salinity increase and rendering vast tract useless for agriculture'. On the other hand, evidences from Rajasthan indicate fluctuations of wet and dry periods. The possibility of climatic changes cannot be fully ruled out. 'It is necessary to discuss in greater detail the recently discovered evidence of drastic changes in the palaeo-channel configurations, especially in Rajasthan. They did affect the Harappans as also the subsequent cultures in the area. Ghosh discovered a large number of chalcolithic settlements on the Ghaggar and Chautang in Rajasthan, now dried up. This raised questions concerning climatic changes in the area, as a result of which these rivers dried up. 'Our recent work, however, has emphasised the significance of the tectonically-caused environmental changes in north and west Rajasthan.... Dikshit has chronicled the various hypotheses in an historical sequence and

several others have discussed the evidence of archaeological remains on these dried up beds.' On the evidences like these (to which are added a few more), Agrawal concludes: 'The Satluj once flowed into the Ghaggar following a path east of Roper, Sirhind, Patiala and Shatrana. The Ghaggar was a mighty river in the past and had on an average 8 km. wide bed. The Satluj, before assuming its present course, braided into a multitude of channels.... As the enechlon faults controlled the river course of the Ghaggar, it was prone to drastic changes due to even minor tectonic movements. Both our Landsat imagery derived palaeo-channels and the field data given by Singh support the flowing of Satluj into the Ghaggar in the past. Some major easterly (from the Ghaggar) river of the past were changing its courses more frequently. We have been able to trace three such courses... Whereas these changes in the courses of various palaeo-channels are fairly clear, and also find support from the field data, the terminal course of the Ghaggar is far from clear.... But when the Ghaggar was a perennial river, it is possible that it could have met the Nara and flowed directly into the Rann of Kutch, without meeting the Indus. The palaeo-channels beyond Marot do indicate such a possibility.... As human settlements were thriving on their banks when they were alive, it would be easy to date these palaeo-channels. Archaeological explorations have thrown welcome light on these problems... The Ghaggar was alive during the pre-Harappan and Harappan times. The Painted Grey Ware (PGW) (c. 800-400 B.C.) mounds are located in the river-bed itself, probably indicating a much reduced discharge of the Ghaggar. The Chautang has a large number of Late Harappan sites.... Considerable geomorphological and archaeological field work is required to document the vagrancy of these rivers. It has to be supported by chemical/minerological analyses of the core profiles from these river-beds to detect the signatures of the different relict rivers. Yet it is obvious that in north and west Rajasthan tectonically-changed palaeo-channel configurations were a major factor which affected the human settlements, perhaps from the pre-Harappan times onwards. Major diversions cut off the vital tributaries and growing desiccation, on the other hand, dried up the once mighty Saraswati and Drishadvati rivers. Around Lothal, the aerial survey carried out by us has indi-

cated an annular pattern of drainage which points to tectonic disturbances. Either a tectonic uplift or an eustatic fall in sea-level was probably responsible for cutting off of the Lothal dockyard from the water channels and eventually from the access to the sea. Sea-level changes also need to be considered... The coastal-port sites of Sutkagendor, Lothal, etc. are far inland now but may have been connected with the sea in their heyday and perhaps fell out of use due to fall in sea-level. How actually did the sea-level changes affect the Harappan culture and its prosperity will require a more exhaustive study.'

Such, then, is an admirable summary of our present knowledge of the changes in physical geography affecting the fate of the Indus Civilization. At the same time, it needs to be noted that the decline and fall of the Indus Civilization must have been a complex phenomenon and to seek its full explanation only in these—or for that matter, exclusively in one type of causal factors—remains exposed to the fallacy of over-simplification. As Agrawal himself adds, 'It may, however, be emphasised that not a single cause but several contributed towards the decline and disappearance of the mighty Harappan civilization'.⁵ This is a point on which a significant number of serious archaeologists concur. 'Just as the creation and maintenance of the system was the outcome of the successful combination of several factors', observe the Allchins, 'so too its breakdown could have been caused by the weakening of any one of these or the upsetting of their harmonious balance and interaction'.⁶ Even Wheeler—about one of whose points there is a great deal of furore among our historians—observes :⁷

Let it be said at once that the factors instrumental in the dissolution of historic civilizations have never been of an uncomplicated kind. It can scarcely be supposed therefore that prehistoric or historic civilizations have endured simple destinies ; in other words, here too no single explanation can convincingly claim total truth. Over-ambitious wars, barbarian invasions, dynastic or capitalistic intrigue, climate, the malarial mosquito have been urged severally in one context or another

5. *Ibid.* 191

6. Allchins RCIP 191

7. Wheeler IC 126

as an over-all cause. Other theories have relied upon racial degeneration, variously defined or cautiously vague; an enlargement, perhaps, of Samuel Butler's plaint that 'life is one long process of getting tired'. Recently, deep floods derived from violent geomorphological changes have been blamed for the end of the Indus civilization. In a particular context which has sometimes been amplified or decried without warrant, I once light-heartedly blamed Indra and his invading Aryans for a concluding share in this phenomenon. The list need not be extended. It is safe to affirm that any one of these answers to the problem is far more likely than not to be fallacious in isolation. The fall, like the rise, of a civilization is a highly complex operation which can only be distorted and obscured by easy simplification.

Interestingly enough, among the causes of the decline and fall of the Indus "empire", Possehl mentions even the possibility of peasant revolt against the exploiters in the cities. As he puts it, 'Political conflict which could destroy the people producing the food and/or the productive potential of the land on which the non-agricultural urbanites ultimately depended could be another such explanation. Might we not even entertain such notions as peasant revolts against the ruling classes who may have been largely or even exclusively city based?'

Such then, are some of the conjectures concerning the decline and end of the Indus Civilization, though also with the caution sometimes expressed against putting an exclusive emphasis on any of these possible factors. The list of conjectures can indeed be enlarged adding to this such possibilities as the financial set-back resulting from the loss of foreign trade from Ur-III times when the 'Mesopotamians looked more towards Arabian and African markets than to Magan and Meluhha'⁸—Meluhha probably having been 'the generalized term for the Indus culture area'.¹⁰ Another factor suggested is 'the "wearing out" of the land due to over-cultivation' though the Allchins observe that this 'seems unlikely as the population pressure can never have been very great' and in later times 'the land retained great fertility'.¹¹ At the same time, the Allchins

8. Possehl in ACI 188

9. S. Asthana in EIP 43

10. *Ibid.* 42

11. Allchins RCIP 224

observe, 'Another possibility which cannot be ignored is of epidemic diseases following in the wake of the floods, etc.'¹²

All these are conjectures, of course. Besides, it remains an open question whether these factors, taken severally or jointly, can explain only the internal decay of the civilization rather than its final destruction. Gordon Childe observes, 'This imposing civilization perished utterly as a result of internal decay accelerated by the shock of barbarian raids'.¹³ He mentions the following archaeological evidences for the last point :¹⁴

Then the civilization was destroyed by barbarian invaders and the cities reoccupied by illiterate aliens. At Harappa these are represented only by extended and flexed burials in Cemetery H and the queer painted vases that accompany them. At Chanhudaro and Jhukar, in Sindh, a distinct barbarian culture, the Jhukar culture replaced the Harappa civilization. Everywhere the literate tradition exemplified in the inscribed 'seal' was extinguished. But judging by the pottery from Cemetery H and Jhukar sites and by metalwork from the latter, some technical traditions were carried over. Presumably potters and smiths survived to work for new customers. Naturally, they produced quite novel objects to suit foreign tastes.

The pottery from Jhukar and Cemetery H is still wheel-made, painted and fired in the old techniques, but shaped quite differently and adorned with new designs. Jhukar smiths made shaft-hole axe-heads and probably axe-adzes and pins with swollen necks. Button or bead seals of stone, fayence or pottery replaced the rectangular glazed steatite 'seal' and were engraved with geometric designs, including the filled cross, or rarely with conventional beasts, instead of inscriptions and lifelike animals.

The button seal like the shaft-hole axe is plainly a north-western intruder in India. The closest parallels to the Jhukar seals, and an exact parallel to the axe-adze comes from Hissar III, in northern Iran. Putative intermediate links will be cited later from Makran and Baluchistan. These agreements suggest that the barbarians who destroyed the Harappa civilization included at least invaders from north-western Iran. Wheeler has boldly suggested their identification with the Vedic Aryas. In any case, the *ṛsis* sang their Vedic hymns in a prehistoric night ; for the invasion completely broke the literary tradition, and there is no fixed point in Indian history till the reign of Darius.

12. *Ibid.* 225

13. Childe WHH 128

14. Childe NLMAE 187-88

3. ARYANS AND THE END OF THE INDUS CIVILIZATION

The view expressed by Wheeler and endorsed by Childe, namely that the decaying or already largely decayed Indus Civilization came to its final end by the invasion of the Indo-Aryan speaking peoples—or more simply by the Vedic peoples—has provoked a great deal of controversy and even much indignation among a section of our scholars.

Wheeler first expressed this view rather forcefully in 1947 in *Ancient India* No. 3, though in 1968 (reprinted in 1979), confronted with some strong criticisms and perhaps also taking note of other possible factors pointed to by other archaeologists as contributing to the final destruction of the Indus valley civilization, he gave the impression of withdrawing or somehow modifying his original emphasis and observed that he had once blamed Indra rather lightheartedly. The tone appears to be somewhat subdued and we shall try to see whether that is at all necessary. But let us begin by quoting his view as originally expressed. In 1947 he observed :¹⁵

The Aryan invasion of the Land of the Seven Rivers, the Punjab and its environs, constantly assumes the form of an onslaught upon the walled cities of the aborigines. For these cities the term used in the *Rgveda* is *pur*, meaning a "rampart," "fort" or "stronghold". One is called "broad" (*prthvi*) and "wide" (*urvi*). Sometimes strongholds are referred to metaphorically as "of metal" (*ayasi*). "Autumnal" (*saradi*) forts are also named : "this may refer to the forts in that season being occupied against Aryan attacks or against inundations caused by overflowing rivers." Forts "with a hundred walls" (*satabhuji*) are mentioned. The citadel may be made of stone (*asmamayi*) : alternatively, the use of mud-bricks is perhaps alluded to by the epithet *ama* ("raw," "unbaked"). Indra, the Aryan war-god, is *puramdara*, "fort-destroyer." He shatters "ninety forts" for his Aryan protegee, Divodasa. The same forts are doubtless referred to where in other hymns he demolishes variously ninety-nine and a hundred "ancient castles" of the aboriginal leader Sambara. In brief, he "rends forts as age consumes a garment."

Where are—or were—these citadels ? It has in the past been supposed that they were mythical, or were "merely places of refuge against attack, ramparts of hardened earth with palisades and a ditch." The recent excavation of Harappa may be thought to have changed the picture. Here we have a highly evolved civilization of essentially

non-Aryan type, now known to have employed massive fortifications, and known also to have dominated the river-system of north-western India at a time not distant from the likely period of the earlier Aryan invasions of that region. What destroyed this firmly-settled civilization? Climatic, economic, political deterioration may have weakened it, but its ultimate extinction is more likely to have been completed by deliberate and large-scale destruction. It may be no mere chance that at a late period of Mohenjo-daro men, women and children appear to have been massacred there (Mackay 1938b : 94f., 116ff., 172). On circumstantial evidence, Indra stands accused.

The evidence cited by Mackay of "men, women and children appear to have been massacred" at a later period of Mohenjo-daro is perhaps not so important for the central argument for viewing the Harappan cities being finally ransacked by the invading Aryans. As P. V. Kane¹⁶ and others have shown, the presence of the few scattered skeletons at Mohenjo-daro can be explained by other hypotheses. Nevertheless the question of the Aryan invasion remains and it is as strongly supported by some archaeologists as bitterly contested by some others. We shall first mention some of the latter.

In 1964, G. F. Dales wrote on the "The Mythical Massacre at Mohenjo Daro."¹⁷ Free use of innuendo and other rhetoric apart, the writer frequently refers to the authority of Marshall and Hargreaves, evidently ignoring the fact that some of their observations have become dated. However, from the archaeological viewpoint, his main or at least one of his main arguments is : '...what is the material evidence to substantiate the supposed invasion and massacre? Where are the burnt fortresses, the arrowheads, weapons, pieces of armor, the smashed chariots and bodies of the invaders and defenders? Despite the extensive excavations at the largest Harappan sites there is not a single bit of evidence that can be brought forth as unconditional proof of an armed conquest and destruction on the supposed scale of the Aryan invasion.' Depending mainly on his own theory of flood etc., Dales concludes : 'The enemy of the Harap-

16. P.V. Kane, *Presidential Address : Indian History Congress*, 16th Session, December 1953

17. G.F. Dales reprinted in Posschl ACI 293-296

18. *Ibid.* 294

pans was Nature... —Indra and the barbarian hordes are exonerated'.¹⁹

As if it is not enough to establish the innocence of Indra, K. M. Srivastava, depending mainly on the theories of natural calamities to explain the end of the Indus civilization, proclaims: 'Indra, therefore stands completely exonerated'.²⁰ However, he wants to go a step further and seeks clue to the genesis of Wheeler's theory of Aryan invasion. As he puts it:²¹

In retrospect, when we look at Wheeler's career as an archaeologist in England and India and we see him as a Brigadier in the British army during World War II, we feel he could not interpret the dubious evidence of Mohenjo-daro and Harappa in any other manner. He started his real archaeological career from Maiden Castle excavations and soon emerged as an authority on Roman archaeology. His *Rome Beyond the Imperial Frontiers* clearly shows how deeply involved he was in the Roman art and architecture, Roman concepts of town-planning—citadels, lower towns, assembly-halls, etc. Thus when he was confronted with the twin-mound towns of the Harappans and their huge fortification walls and mud-brick platforms as well as the photographs of the so-called 'massacre' at Mohenjo-daro he was at once reminded of Roman history and archaeology. Marshall's (1931) and Vats' (1940) reports on Mohenjo-daro and Harappa, respectively, as well as Pig-gott's *Prehistoric India* (1950: 244-248) provided him sufficient speculations on Aryan warfare and Indra's attack on Harappan towns. The common text-books on Indian history adorned his personal library. For the former army man and the Director General of Archaeology in India, as Wheeler was, the Aryan invasion of Indus towns (1961: 249) was as simple as the Roman invasion of Britain and Turkey.

A Brigadier in the British army almost obsessed with the Roman model is naturally not expected to know much of the Vedas. Wherefrom, then, did he get the Vedic materials to substantiate his theory of the Aryan invasion? Srivastava has a simple answer to this: "In fact it was V. S. Agarawal who provided these references to Dr. Wheeler when the latter requested Professor Agarawal, then an officer in the Archaeological Survey of India, on tour at Harappa, although Dr. Wheeler never acknowledged it in any of his writings."²²

19. *Ibid.* 296

20. K.M. Srivastava in FIC 441

21. *Ibid.* 442

22. *Ibid.*

All this is evidently imputing a certain dishonesty to Wheeler. Our point, however, is that if Wheeler is at all to be criticised for not acknowledging the real source of his information about the Vedic materials, we are to look elsewhere. The theory of the Aryan invasion of the Indus Valley Civilization—and this based upon a considerable amount of Vedic data (inclusive of those used by Wheeler)—was already advanced by R. P. Chanda in 1926 and 1929. Since these were published as *Memoirs of the Archaeological Survey of India* Nos. 31 and 41, Wheeler's want of acquaintance with these is not easily conceivable.

The fact that within a few years of the discovery of the Indus Valley Civilization, the sound Vedic scholarship of R. P. Chanda led him to the view that the ruin of the cities was finally due to the attack of the Vedic people under the leadership of their war-god Indra is, to say the least, a remarkable academic performance on his part. But most of the writers on Indian archaeology do not mention this and the hypothesis is generally associated with the names of Wheeler and Piggott. Therefore we propose to reproduce here the writings of R. P. Chanda at considerable length.

4. R. P. CHANDA AND THE THEORY OF ARYAN INVASION

Here are some of the observations of R. P. Chanda published in 1926 in No. 31 of the *Memoirs of the Archaeological Survey of India* (pp. 1-5) :²³

The archaeological discoveries at Harappa in the Punjab and at Mohen-jo-Daro in Sind have pushed back the monumental history of India from the third century B.C. to at least the beginning of the third millennium B.C. by one single stroke. A series of literary monuments, the Vedic *Samhitas*, the *Brahmanas*, and the *Sutras*, have long been known, the youngest in age among which is probably older than the third century B.C. But a wide divergence of opinion relating to the age of these works and particularly of the *Rgveda* among scholars renders their use as sources of history unsafe....

To facilitate the co-ordination of the data of Archaeology with literary evidences I propose to discuss in this paper some of the passages in the Vedic literature that throw light on the early history of the Indus valley.....

23. R.P. Chanda in MASI No. 31, 1-5

Many of the stanzas of the *Rgveda* contain references to Pura and Pur both of which terms mean *nagara*, 'town', in classical Sanskrit. In one stanza (7.15.4) an extensive (*satabhuji*) Pur made of copper or iron (*ayas*) is referred to. In another stanza (1.58.8) prayer is offered to Agni to protect the worshipper with Purs of *ayas*. In such passages *ayas* is evidently used in a metaphorical sense to denote strength. Susna, a demon, is said to have a moveable (*carisnva*) Pura (8.1.28). In the *Rgveda* Pura is much oftener connected with the enemies of the Aryas than with the Arya Rsis and warriors. Two of the famous Rigvedic kings, Divodasa, the chief of the Bharatas, and Purukutsa, the chief of the Purus, are found engaged in war with hostile owners of Puras. Divodasa was the son of Vadhryasva and grandfather of the more famous Sudas who defeated a confederacy of ten tribes including the Yadus, Turvasas and Purus on the western bank of the Parusni (Ravi). It is said (4.30.20) that Indra overthrew a hundred Puras made of stone (*asmanmayi*) for his worshipper Divodasa. The Puras that Indra overthrew for Divodasa evidently belonged to Sambara who is called a Dasa (non-Arya or demon) of the mountain (6.26.5). In one stanza (9.61.2), among the enemies of Divodasa are mentioned the Yadu (the Chief of the Yadus) and Turvasa (the chief of the Turvasas) with Sambara. The greatest feat that Indra performed on behalf of Purukutsa, the chief of the Purus, is thus described in a stanza (6.20.10), 'May we, O Indra, gain new (wealth) through your favour; the Purus autumnal (*saradi*) Puras with thunder weapon, slew Dasas and gave autumnal (*saradi*) Puras with thunder weapon, slew Dasas and gave wealth to Purukutsa'. The epithet *saradi*, usually translated as 'autumnal,' is explained by Sayana in different ways. In his commentary on the above stanza he explains the term *saradi* as 'belonging to a demon named Sarat.' But in other places (1.131.4 etc.) he explains it as 'annual Puras of the enemies strengthened for a year with ramparts, ditches, etc.' The authors of the *Vedic Index* are of opinion that *saradi* or autumnal Puras 'may refer to the forts in that season being occupied against Arya attacks or against inundations caused by overflowing rivers.' The same exploit performed by Indra on behalf of the chief of the Purus is also referred to in certain other stanzas....

The terms Pur and Pura mean *nagara*, 'city', 'town', and not fort. The Sanskrit equivalent of 'fort' is *durga* which also occurs in the *Rgveda* (5.34.7; 7.25.2). In one stanza (1.41.3) not noticed by the authors of the *Vedic Index* Durga and Pura occur side by side. Sayana here takes Pura as an epithet of Durga meaning 'neighbouring'. But if we can shake off our bias relating to the absence of towns in the Rigvedic period we can recognise in this stanza references to both fort and town. The recovery of the ruins of cities at Harappa and Mohen-jo-Daro leaves no room for doubt that the Rigvedic Aryas were familiar with towns and cities of aliens. It is futile to seek any more historical elements in the legends of Divodasa and Purukutsa than

perhaps the names of these heroes. But if we eliminate the mythical and fanciful additions there is no reason to doubt the possibility of the nucleus. There existed and the folk memory remembered that there once existed Arya worshippers of Indra who waged wars against civilized aboriginal neighbours living in towns and fighting from within strong-holds. Who, then, were these enemies of the Aryas? Do the hymns of the *Rgveda* give us any more information about them?

It appears to me that the aboriginal towns-folk with whom the Aryas came into collision in the Indus Valley are called Panis in the hymns of all the books of the *Rgveda*. Yaska (*Nirukta* 6.27) in his comment on *Rgveda* 8.66.10 says, 'The Panis are merchants,' and in his comment on R.V. 10.108.1 (*Nirukta* 11.25) he calls the Panis demons. The distinction between the human and the superhuman Pani is also recognised by Sayana, the author of the commentary on the *Rgveda*, and the context justifies the distinction. The word Pani is evidently derived from *pana*, 'Price.' The human Panis of the *Rgveda* are wealthy merchants who do not offer sacrifice and do not give gifts to priests. In R.V. 1.124.10 the poet addressing Dawn says, 'Let the Panis who do not perform sacrifice and do not give gifts sleep unwakened (for ever)'. Another poet sings, 'Ye mighty ones (Asvins) what do you do there; why do you stay there among people who are held in high esteem though not offering sacrifices; ignore them, destroy the life of the Panis' (R.V. 1.83.3). A poet prays to Indra (1.33.3), 'Do not behave like Pani' (*ma Panibbhuh.*), which according to the scholiast means, 'Do not demand the price of kine.' Another poet, expecting a suitable reward for his offering of Soma drink, addresses the same deity as Pani (8.45.14). The Soma-drinker Indra does not like to make friends with the rich Pani who does not offer Soma sacrifice (4.28.7). A poet prays (3.58.2), 'Destroy in us the mentality of the Pani' (*jaretham asmat viPaneh manisam*). Sometime the Rsi (Poet) betrays a conciliatory mood. In one hymn (6.53) the god Pusan is repeatedly requested 'to soften the heart of the Pani' and make the Panis obedient. This hymn occurs in a book (6) of the *Rgveda* composed by Rsis of the family of Bharadvaja. In one hymn of this book (6.45.31-33) the poet, a Bharadvaja, praises Brbu, a Pani chief, for giving thousands and a thousand liberal gifts. Indian tradition long remembered this acceptance of gifts by Bharadvaja from the Pani Brbu as an exceptional case, an example of the special rule that a Brahmin who has fallen into distress may accept gifts from despicable men without being tainted by sin. We are told in the code of Manu (10.107), 'Bharadvaja, a performer of great austerities, accepted many cows from the carpenter Brbu, when he was starving together with his sons in a lonely forest.' (Buhler). Sayana in his commentary on R.V. 6.45.31 describes Brbu as the carpenter of the Panis.

It is evident from the hymns of the *Rgveda* that the Aryas were divided into two main classes. the priests and the warriors. Cattle breed-

ing appears to be the main source of their livelihood, cows being the chief wealth. Agriculture was practised to a limited extent. A hymn (9.112) refers to the different professions followed and the crafts practised by the Aryas. Trade finds no place in the list. So the conclusion that the much maligned Panis were the representatives of an earlier commercial civilisation seems irresistible. Among the antiquities unearthed at Mohen-jo-Daro are coins with pictographic legends that indicate the very early development of commercial life in the Indus valley. The Panis probably represented this pre-historic civilisation of the Indus Valley in its last phase when it came into contact with the invading Arya civilisation. During the second millennium B.C. there occurred in the Indus Valley events analogous to those that occurred in the Aegean world at about the same time, that is to say, successive waves of invaders of Aryan speech poured from the north-west. These invaders who in the *Rgveda* call themselves Arya met in the southern part of the valley a civilised people who lived in cities and castles and mainly depended on commerce for their livelihood. The Arya conquerors who were inferior in material culture either destroyed the cities or allowed them to fall into ruin. Their great god Indra is called Puroha or Purandara, 'sacker of cities'. Like the pre-historic civilisation of the Aegean, the pre-historic civilisation of the Indus Valley also failed to survive the shock of the Aryan invasion.

5. ARCHAEOLOGY AN AID TO VEDIC STUDIES

Let us briefly put the point we have been trying to argue. The discovery of the Indus Valley Civilization, besides dramatically extending our knowledge of ancient Indian history, has also another dimension. It has become a tool for us for the interpretation of Vedic literature—specially of the *Rgveda*. The Vedic scholars may profitably turn to the archaeological findings to see if these can provide us with any clue to certain otherwise unexplained—or at best fancifully explained—passages of the *Rgveda*. Thus, for example, the *Rgveda* speaks of a considerable number of cities in the Land of the Seven Seas and of the ransacking of these by the Aryans under the leadership of the war-god Indra. The whole thing cannot be brushed aside as a mere figment of imagination of the Vedic poets for the simple reason that those who have never seen any city cannot write about these: the Vedic peoples themselves could by no stretch of imagination be city-dwellers, it being overwhelmingly obvious from the internal evidences of the *Rgveda* that they were pastoral nomads after all. Therefore, before the discovery of Mohenjo-daro and Harappa—soon followed by the discovery of

many other cities within the Harappan cultural zone—there could at best be some speculations about these *pura*-s or cities and of Indra's role as *purandara* or the sacker of cities in the *Rgveda*—speculations, some specimens of which are to be found in the *Vedic Index*. With the discovery of ruined cities in the Harappan cultural zone, Vedic scholars are relieved of the obligation of indulging in such speculations, notwithstanding the circumstance that many questions concerning the archaeological findings still remain controversial or perhaps not yet fully explained. Thus, for example, the real story of the scattered skeletons found in Mohenjo-daro may remain a problem for the archaeologists, so also that of the corpses of the Aryan soldiers and their arms still eluding the archaeologists' spade. We may hope that more digging and better inferences of the archaeologists would solve such problems. What in the meanwhile is gained by archaeology in the matter of throwing light on the *Rgveda* must not be ignored, for the *Rgvedic* references to the cities and of the ransacking of these seem to have no better explanation than is provided by the material remains in the Harappan cultural zone. To correlate archaeology with literary evidences is often considered to be a tricky and delicate matter. The importance of archaeology as tool for interpreting or understanding certain Vedic passages remains yet to be more adequately examined. Yet as a tool it sometimes proves to be of surprising importance. We shall mention here another example.

6. D. D. KOSAMBI AND THE VRTRA MYTH

Let us not forget, however, that the Vedic poets were poets after all. And as poets, they belonged to the ancient world. So they are not expected to understand and objectively describe the phenomena they record in their own way. We are thus bequeathed by them with the tricky task of disentangling reality from myth in their poetry. We shall mention here one example of how D. D. Kosambi attempts it.

Like Purandara or "ransacker of cities", Indra is often called in the *Rgveda* *Vrtrahan* or "slayer of *Vrtra*". For the Vedic poets, this was apparently one of his great achievements. As Macdonell observes, 'the chief and specific epithet of Indra is *Vrtrahan*, "*Vrtra*-slayer". It is applied about 70 times to him in the *Rgveda*'.²⁴ *Vrtra* is usually taken as the name of a dra-

gon, destroying whom often with the aid of other gods, specially of the horde of semi-deities called the Maruts, was considered one of his major performances. But there are certain peculiarities about this performance which cannot be easily overlooked. Vrtra literally means the Obstructor, and is also described as *ahi*, literally 'serpent'. In other words, it is an obstructor, which also looked like a serpent. Many things are said by the Vedic poets about this serpent-like obstructor, among which some are extremely interesting. Vrtra, it is said, was complacent with the idea that its real vulnerable part was known to none; however, along with the Maruts, Indra discovered its vulnerable part (iii.32.4; v. 32.5) and thus he struck and destroyed the 'obstructor' with such fierceness as to shake the heaven and world. And what was the result? The whole area was flooded with water which was being obstructed by the serpent-looking obstructor. Here is how Macdonell gives some of the passages referring to the great exploits of Indra:²⁵

He smote Vrtra who encompassed the waters (vi. 20.2; etc.) or the dragon that lay around (*parisayanam*) the waters (iv. 19.2); he overcame the dragon lying on the waters (v. 30.6). He slew the dragon hidden in the waters and obstructing the waters and the sky (ii. 11.5), and smote Vrtra who enclosed the waters, like a tree with the bolt (ii. 14.2). Thus 'conquering the waters' (*apsujit*) is his exclusive attribute... For many dawns and autumns Indra has let loose the streams after slaying Vrtra (iv. 19.8)... He cleaves the mountain, making the streams flow or taking the cows (i. 57.6; x. 89.7), even with the sound of his bolt (vi. 27.1). When he laid open the great mountain, he let loose the torrents and slew the Danava, he set free the pent up springs, the udder of the mountain (v. 32.1-2). He slew the Danava, shattered the great mountain, broke open the well, set free the pent up waters (i. 57.6; v. 33.1). He releases the streams which are like imprisoned cows (i. 61.10), or which, like lowing cows, flow to the ocean (i. 32.2). He won the cows and Soma and made the seven rivers flow (i. 32.12; ii. 12.12). He releases the imprisoned waters (i. 57.6; i. 103.2), released the streams pent up by the dragon (ii. 11.2), dug out channels for the streams with his bolt (ii. 15.3), let the flood of waters flow in the sea (ii. 19.3), caused the waters pent up by Vrtra to flow (iii. 26.6; iv. 17.1).

And so on. The entire section of Macdonell dealing with Indra's exploit of destroying Vrtra—snake-looking obstructor—

24. Macdonell VM 60

25. *Ibid.* 59

needs to be read in full to see that according to the Vedic poets the main result of this was the release of pent-up water. Incidentally, Macdonell points to the use in the *Rgveda* of the word *arnas* or flood in this connection.²⁶

Shorn of poetic imagination and the inevitable proclivity to myth-making in ancient poetry, what does all this really mean? D. D. Kosambi answers :²⁷

Vedic Indra is described again and again as freeing the streams. This was taken as a nature-myth in the days of Max Muller, a poetic representation of the rain-god letting pent-up waters loose from imprisoning clouds. Recorded but ignored details of the feat make such an explanation quite impossible. Indra freed the rivers from the grip of a demon Vrtra. The word has been analysed by two most competent philologists [with full knowledge of Iranian (Aryan) as well as Sanskrit records] who did not trouble to theorise about the means of production. Their conclusion from purely philological considerations was that *vrtra* meant "obstacle", "barrage", or "bloquage", not a demon. The actual Rgvedic description independently bears this out in full. The demon lay like a dark snake across the slopes. The rivers were brought to a standstill (*tastabhanah*) ; when the "demon" was struck by Indra's shattering weapon (*vajara*), the ground buckled, the stones rolled away like chariot wheels, the pent-up waters flowed over the demon's recumbent body (cf. RV. 4.19.4-8 ; 2.15.3). This is a good description of dams (not embankments as Piggott would have it) being broken up, while such prehistoric dams, now called Gebr-band, are still to be found on many water-courses in the western parts of the region under consideration. The evidence for Indra's breaking up dams is not merely rationalization of the Vrtra myth. RV. 2.15.8 : *rinaq rodhamsi krtrimani*="he removed artificial barriers" makes this clear : *rodhas* means "dam" elsewhere in the RV, as in later Sanskrit. Indra is praised for restoring to its natural course the river Vibali, which had flooded land along its banks. That is, the pre-Aryan method of agriculture depended upon natural floods and flooding the lands on the banks of smaller rivers by means of seasonal (RV. 5.32.2) dams (without regular masonry), to obtain the fertilising deposit of silt to be stirred by the harrow. The Aryans shattered this dam system, thereby ruining the agriculture of the region and the possibility of continuing city life for long, or of maintaining the urban population. The fact of the ruin is undeniable ; the causes have to be deduced from whatever data is available, which includes numerous heavy flood silt deposits that are visible in Mohenjo-daro excavations. The very floods

26. *Ibid.* 59

27. D.D. Kosambi ISIH 70-71

which endangered city and hamlet had made possible the agriculture which supported the inhabitants.

Kosambi's theory of the agricultural technique in the Harappan region depending on toothed harrow rather than plough has to be discarded, of course, specially after the excavation at Kalibangan revealed an actual ploughed field. However, at least among a section of archaeologists the "flood theory" is receiving increasing importance. If there is substance in this theory, it helps us to understand the Rgvedic passages related to Indra's exploit against Vrtra—the snake-like obstructor of water—much better than the earlier views wanting us to read this or that myth in these passages. Archaeology thus becomes a tool for the interpretation of Rgvedic passages which remain otherwise more or less mysterious for us.

7. SUMMING UP

One reason for the tenacious objection against the theory of the Aryan invasion as the final cause of the already decaying Indus civilization resulting from the cumulative effect of various possible causes seems to be frankly chauvinistic. Later Indian mythology wants to feed us with the belief that Indra was the king of the gods. Inputing to him such a negative activity as the destruction of the glorious civilization of ancient India can understandably hurt the feeling of some rooted primarily on religious convictions. An example of this seems to be the article on "The Myth of Aryan Invasion of Harappan Towns" by K. M. Srivastava already referred to. After attempting to refute elaborately the theory of Aryan invasion, he apparently feels the need of coming out sharply against Wheeler's statement that on circumstantial evidence, Indra stands condemned'. As we have already seen Srivastava passionately proclaims : Indra stands completely exonerated.

As against such passionate defence of the Vedic god, at least one point needs to be remembered. The *Rgveda* is a collection of songs and hymns of an ancient period after all, and hence it will be an anachronism to judge the standard of morality reflected in it by our contemporary standards. Sacking or destroying the Harappan cities may appear more or less deplorable if judged by the moral standards of our time. But it was not so to the Vedic poets, who saw in such actions the

most magnificent feats of courage and strength, and, therefore, which in their standard must have been a highly laudable performance. That is why, they sang of the glory of Indra as *purandara* or destroyer of the cities. They would not have surely done it had they been under the influence of *our standard* of morality.

So the rather emotional statement completely exonerating Indra makes no real sense. To the ancient poets of the *Rgveda*, the personal bravery and strength of Indra was highly honourable, though these were often exhibited under the influence of alcohol or the intoxicating drink they called *soma*.

The point is that the standard of morality changes, not only from age to age but mainly because of the social conditions in which it is expressed. In the society in which the Vedic poets lived, certain acts considered most despicable by our standard of morality are actually praised by the poets in ways that appear to us to be most shocking. Here is an extreme example of this. In one hymn of the *Rgveda*, a certain poet praises Indra by way of addressing him as follows :

Who has made thy mother a widow? Who has sought to slay the sleeping and the waking? What deity has been more gracious than thou, since thou hast slain the father having seized him by the foot? (RV. iv. 18.12)

We have—from the standpoint of our own sense of morality—perhaps no adequate vocabulary to condemn such an act of abject patricide, particularly when it is associated with the story that Indra did it because his father had stolen some amount of the intoxicating stuff from Indra's stock (*Taittiriya Samhita* vi. 1.3.6), to which Sayana refers.

Can we, with our sense of morality, exonerate Indra from such an act? We cannot. But such a question would have perhaps made no sense to the Vedic poet himself.

Wheeler's use of the words "Indra stands condemned" was perhaps intended to be rhetorical. But Srivastava's retort that "Indra stands completely exonerated" is just religious chauvinism.